Gammaherpesvirus infection modulates the temporal and spatial expression of SCGB1A1(CCSP) and BPIFA1 (SPLUNC1) in the respiratory tract

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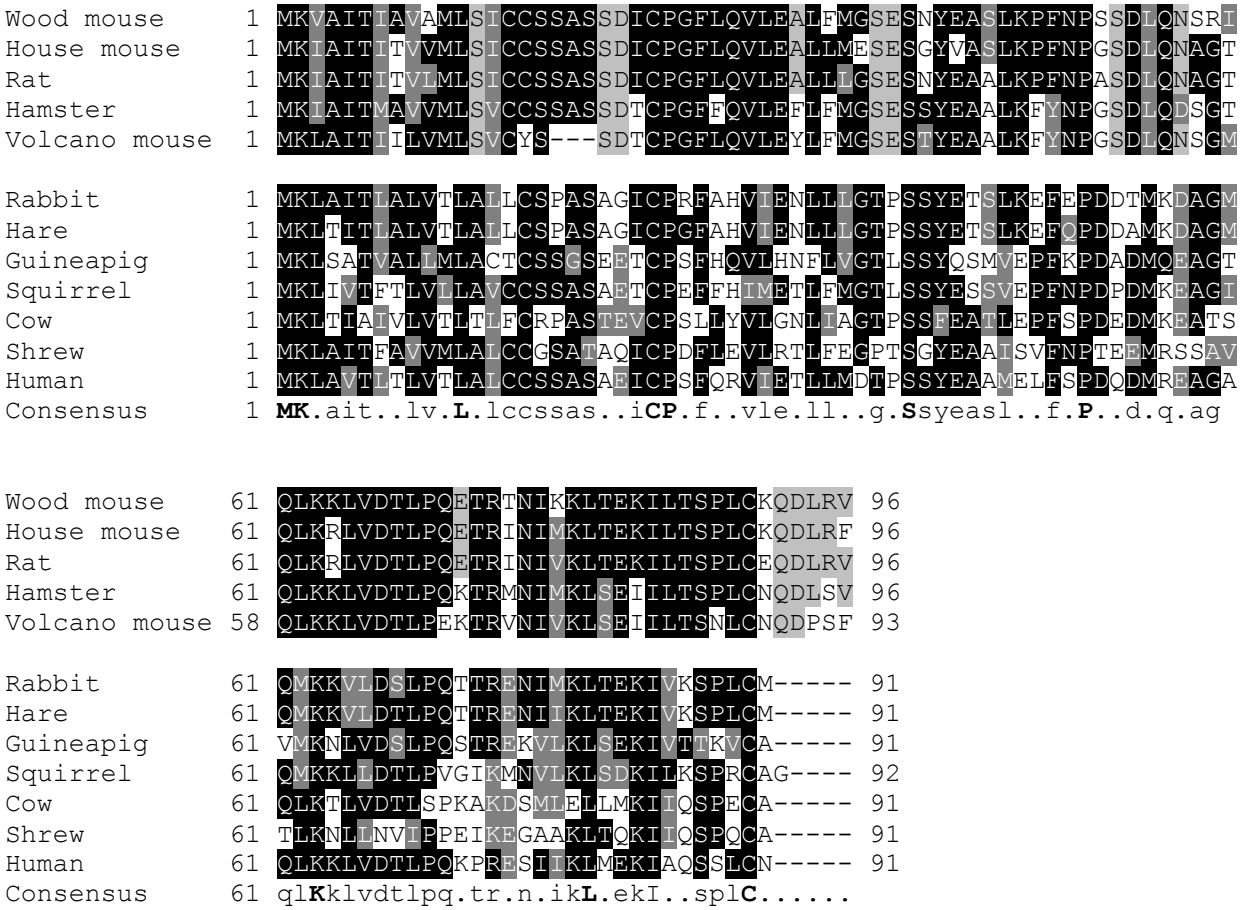
Figure E1



Alignment of SCGB1A1 amino-acid sequences

The amino-acid sequences of SCGB1A1 from a number of mammalian species were compared using BLAST [1] and ClustalW 2.0 [2] and the Clustal output was represented diagrammatically using and Boxshade 3.21 (www.ch.EMBnet.org). Rodent sequences are on the top 5 lines and other species below with a consensus sequence last. Black text on light grey represents residues conserved in rodents, white text on dark grey represents residues conserved between species and white text on mid-grey represents residues that are semi-conserved. The SCGB1A1 sequences used for analysis are conceptual translations from the mRNA sequences held in Genbank as follows: Wood mouse (*Apodemus sylvaticus*) HM008619.1, House mouse (*Mus musculus*) NM_011681.2, Rat (*Rattus norvegicus*) BC069174.1, Hamster (*Mesocricetus auratus*) L37041.1, Volcano mouse (*Neotomodon alstoni*) AJ583234.1, Rabbit (*Oryctolagus cuniculus*) NM_001082237.1, Hare (*Lepus capensis*) M25609.1, Guinea Pig (*Cavia porcellus*) XM_003467858.1, Cow (*Bos Taurus*) NM_001076976.2, Human (*Homo sapiens*) NM_003357.3. The sequences of the following were from gene prediction on Ensembl: Squirrel (*Sciurus vulgaris)* ENSSTOG00000010085, Shrew (Sorex araneus) ENSSARG00000009790.

Figure E2

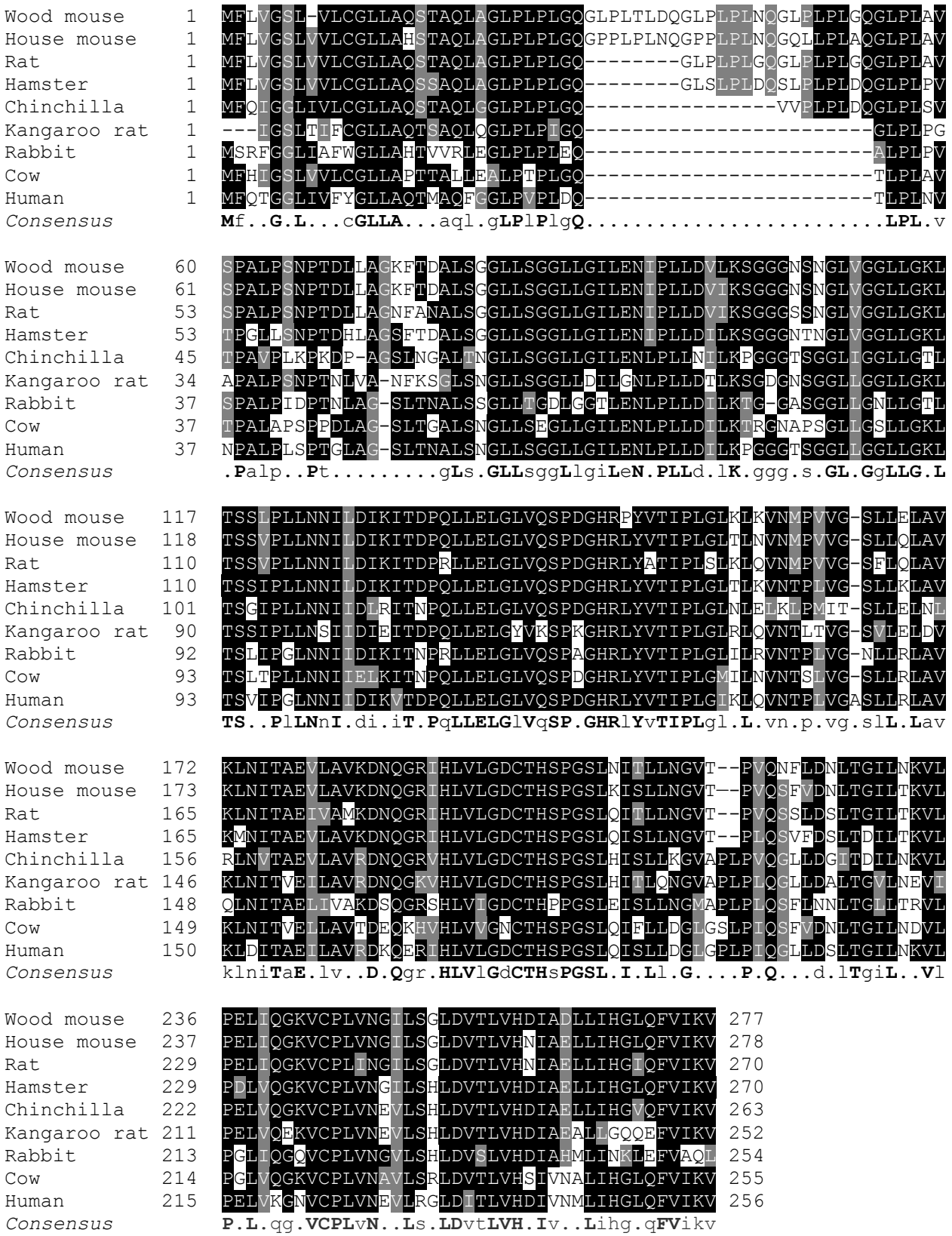

Wood mouse 1 MFLVGSL-VLCGLLAQSTAQLAGLPLPLGQGLPLTLDQGLPLPLNQGLPLPLGQGLPLAV
House mouse 1 MFLVGSLVVLCGLLAHSTAQLAGLPLPLGQGPPLPLNQGPPLPLNQGQLLPLAQGLPLAV
Rat 1 MFLVGSLVVLCGLLAQSTAQLAGLPLPLGQ--------GLPLPLGQGLPLPLGQGLPLAV
Hamster 1 MFLVGSLVVLCGLLAQSSAQLAGLPLPLGQ--------GLSLPLDQSLPLPLDQGLPLPV
Chinchilla 1 MFQIGGLIVLCGLLAQSTAQLGGLPLPLGQ----------------VVPLPLDQGLPLSV
Kangaroo rat 1 ---IGSLTIFCGLLAQTSAQLQGLPLPIGQ----------------------GLPLPG
Rabbit 1 MSRFGGLIAFWGLLAHTVVRLEGLPLPLEQ----------------------ALPLPV
Cow 1 MFHIGSLVVLCGLLAPTTALLEALPTPLGQ----------------------TLPLAV
Human 1 MFQTGGLIVFYGLLAQTMAQFGGLPVPLDQ----------------------TLPLNV
Consensus Mf..G.L...cGLLA...aql.gLPlPlgQ.....LPL.v
Wood mouse 60 SPALPSNPTDLLAGKFTDALSGGLLSGGLLGILENIPLLDVLKSGGGNSNGLVGGLLGKL
House mouse 61 SPALPSNPTDLLAGKFTDALSGGLLSGGLLGILENIPLLDVIKSGGGNSNGLVGGLLGKL
Rat 53 SPALPSNPTDLLAGNFANALSGGLLSGGLLGILENIPLLDVIKSGGGSSNGLVGGLLGKL
Hamster 53 TPGLLSNPTDHLAGSFTDALSGGLLSGGLLGILENIPLLDILKSGGGNTNGLVGGLLGKL
Chinchilla 45 TPAVPLKPKDP-AGSLNGALTNGLLSGGLLGILENLPLLNILKPGGGTSGGLIGGLLGTL
Kangaroo rat 34 APALPSNPTNLVA-NFKSGLSNGLLSGGLLDILGNLPLLDTLKSGDGNSGGLLGGLLGKL
Rabbit 37 SPALPIDPTNLAG-SLTNALSSGLLTGDLGGTLENLPLLDILKTG-GASGGLLGNLLGTL
Cow 37 TPALAPSPPDLAG-SLTGALSNGLLSEGLLGILENLPLLDILKTRGNAPSGLLGSLLGKL
Human 37 NPALPLSPTGLAG-SLTNALSNGLLSGGLLGILENLPLLDILKPGGGTSGGLLGGLLGKL
Consensus .Palp..Pt.....gLs.GLLsggLlgiLeN.PLLd.lK.ggg.s.GL.GgLLG.L
Wood mouse 117 TSSLPLLNNILDIKITDPQLLELGLVQSPDGHRPYVTIPLGLKLKVNMPVVG-SLLELAV
House mouse 118 TSSVPLLNNILDIKITDPQLLELGLVQSPDGHRLYVTIPLGLTLNVNMPVVG-SLLQLAV
Rat 110 TSSVPLLNNILDIKITDPRLLELGLVQSPDGHRLYATIPLSLKLQVNMPVVG-SFLQLAV
Hamster 110 TSSIPLLNNILDIKITDPQLLELGLVQSPDGHRLYVTIPLGLTLKVNTPLVG-SLLKLAV
Chinchilla 101 TSGIPLLNNIIDLRITNPQLLELGLVQSPDGHRLYVTIPLGLNLELKLPMIT-SLLELNL
Kangaroo rat 90 TSSIPLLNSIIDIEITDPQLLELGYVKSPKGHRLYVTIPLGLRLQVNTLTVG-SVLELDV
Rabbit 92 TSLIPGLNNIIDIKITNPRLLELGLVQSPAGHRLYVTIPLGLILRVNTPLVG-NLLRLAV
Cow 93 TSLTPLLNNIIELKITNPQLLELGLVQSPDGHRLYVTIPLGMILNVNTSLVG-SLLRLAV
Human 93 TSVIPGLNNIIDIKVTDPQLLELGLVQSPDGHRLYVTIPLGIKLQVNTPLVGASLLRLAV
Consensus TS..PlLNnI.di.iT.PqLLELGlVqSP.GHRlYvTIPLgl.L.vn.p.vg.slL.Lav
Wood mouse 172 KLNITAEVLAVKDNQGRIHLVLGDCTHSPGSLNITLLNGVT--PVQNFLDNLTGILNKVL
House mouse 173 KLNITAEVLAVKDNQGRIHLVLGDCTHSPGSLKISLLNGVT--PVQSFVDNLTGILTKVL
Rat 165 KLNITAEIVAMKDNQGRIHLVLGDCTHSPGSLQITLLNGVT--PVQSSLDSLTGILTKVL
Hamster 165 KMNITAEVLAVKDNQGRIHLVLGDCTHSPGSLQISLLNGVT--PLQSVFDSLTDILTKVL
Chinchilla 156 RLNVTAEVLAVRDNQGRVHLVLGDCTHSPGSLHISLLKGVAPLPVQGLLDGITDILNKVL
Kangaroo rat 146 KLNITVEILAVRDNQGKVHLVLGDCTHSPGSLHITLQNGVAPLPLQGLLDALTGVLNEVI
Rabbit 148 QLNITAELIVAKDSQGRSHLVIGDCTHPPGSLEISLLNGMAPLPLQSFLNNLTGLLTRVL
Cow 149 KLNITVELLAVTDEQKHVHLVVGNCTHSPGSLQIFLLDGLGSLPIQSFVDNLTGILNDVL
Human 150 KLDITAEILAVRDKQERIHLVLGDCTHSPGSLQISLLDGLGPLPIQGLLDSLTGILNKVL
Consensus klniTaE.lv..D.Qgr.HLVlGdCTHsPGSL.I.Ll.G....P.Q...d.lTgiL..Vl
Wood mouse 236 PELIQGKVCPLVNGILSGLDVTLVHDIADLLIHGLQFVIKV 277
House mouse 237 PELIQGKVCPLVNGILSGLDVTLVHNIAELLIHGLQFVIKV 278
Rat 229 PELIQGKVCPLINGILSGLDVTLVHNIAELLIHGIQFVIKV 270
Hamster 229 PDLVQGKVCPLVNGILSHLDVTLVHDIAELLIHGLQFVIKV 270
Chinchilla 222 PELVQGKVCPLVNEVLSHLDVTLVHDIAELLIHGVQFVIKV 263
Kangaroo rat 211 PELVQEKVCPLVNEVLSHLDVTLVHDIAEALLGQQEFVIKV 252
Rabbit 213 PGLIQGQVCPLVNGVLSHLDVSLVHDIAHMLINKLEFVAQL 254
Cow 214 PGLVQGKVCPLVNAVLSRLDVTLVHSIVNALIHGLQFVIKV 255
Human 215 PELVKGNVCPLVNEVLRGLDITLVHDIVNMLIHGLQFVIKV 256
Consensus P.L.qg.VCPLvN..Ls.LDvtLVH.Iv..Lihg.qFVikv

Figure E2: Alignment of BPIFA1 amino-acid sequences

The amino-acid sequence of BPIFA1 from wood mouse was compared with equivalent sequences from a number of mammalian species using BLAST, [1] and ClustalW2.0 [2] and the Clustal output was represented diagrammatically using and Boxshade3.21 (www.ch.EMBnet.org). White text on dark grey represents residues conserved between species and white text on mid-grey represents residues that are semi-conserved. The BPIFA1 sequences used for analysis are conceptual translations from the mRNA sequences held in Genbank as follows: Wood mouse (*Apodemus sylvaticus*) HM008620, House mouse (*Mus musculus*) NM_011126.3, Rat (*Rattus norvegicus*) NM_172031.1, Hamster (*Cricetulus griseus*) XM_003512019.1, Chinchilla (*Chinchilla lanigera)* FJ830605.1, Cow (*Bos Taurus*) BC114803.1, Human (*Homo sapiens*) NM_016583.3. The Kangaroo rat (*Dipodomys ordii*) sequence was from an *Ensembl gene prediction* ENSDORP00000002137

REFERENCES

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2 Larkin MA, Blackshields G, Brown NP*, et al.* Clustal W and Clustal X version 2.0. *Bioinformatics* 2007;23(21):2947-2948.